The following Listing of Claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-10. (Cancelled)

11. (Currently Amended) ~~The~~ A device for estimating DC motor coil temperature ~~as set forth in claim 10, wherein~~ comprising:

an inverter that supplies an output to a DC motor; and

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor, and

the resistance value calculating section ~~is~~ being further configured to calculate the resistance of the coil of the DC motor by using a duty difference and a current difference by using a plurality of duty ratios.

12. (Currently Amended) ~~The~~ A device for estimating DC motor coil temperature ~~as set forth in claim 10, wherein~~ comprising:

an inverter that supplies an output to a DC motor; and

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor, and

the coil temperature estimating section ~~is~~ being further configured to employ a fixed coordinate system and apply a voltage with an electrical angle determined to be a constant angle.

13. (Previously Presented) The device for estimating DC motor coil temperature as set forth in claim 11, wherein

the coil temperature estimating section further includes a constant duty maintaining section that is configured to maintain a constant duty for equal to or greater than at least 0.5 seconds.

14. (Currently Amended) ~~The~~ A device for estimating DC motor coil temperature ~~as set forth in claim 10, wherein~~ comprising:

an inverter that supplies an output to a DC motor; and

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor, and

the coil temperature estimating section ~~is~~ being further configured to detect a motor current by using a shunt resistor, and calculate a coil resistance at a carrier frequency lower than that for driving the DC motor.

15. (Cancelled)

16. (Currently Amended) A DC motor control device ~~using the device as set forth in claim 10~~ for estimating ~~the~~ DC motor coil temperature ~~and~~ comprising:

an inverter that supplies an output to a DC motor;

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage, and

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor; and

a control section configured to set a DC motor temperature to be a predetermined temperature based upon the estimated coil temperature.

17. (Currently Amended) A DC motor control device ~~using the device as set forth in claim 10~~ for estimating ~~the~~ DC motor coil temperature ~~and~~ comprising:

an inverter that supplies an output to a DC motor;

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor; and

a control section configured to set a time interval until starting of the DC motor based upon the estimated coil temperature.

18-23. (Cancelled)

24. (Currently Amended) ~~The~~ A device for estimating DC motor coil temperature ~~as set forth in claim 10, wherein~~ comprising;

an inverter that supplies an output to a DC motor; and

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor, and

the coil temperature estimating section ~~is~~ being further configured to calculate the resistance of the coil by compensating voltage drops due to transistors and diodes included in the inverter, and estimate the temperature of the coil from the resistance of the coil.

25. (Cancelled)

26. (Currently Amended) ~~The~~ A device for estimating DC motor coil temperature ~~as set forth in claim 10, wherein~~ comprising:

an inverter that supplies an output to a DC motor; and

a coil temperature estimating section comprising

a resistance value calculating section configured to calculate a resistance of a coil of the DC motor by using a motor current and a motor voltage,

a temperature output section configured to output an estimated coil temperature by using resistance-temperature characteristics of the coil of the DC motor, and

the coil temperature estimating section ~~is~~ being further configured to detect a rotor position of the DC motor, calculate an inductance from the rotor position that was detected, and compensate the coil temperature calculated from the resistance of the coil, in correspondence with the inductance that was calculated.

27. (Currently Amended) The device for estimating DC motor coil temperature as set forth in one of ~~claim 10 to claim 15~~ claims 11, 12 and 14, wherein

the coil temperature estimating section is further configured to detect the motor current at a central timing of an ON-time or an OFF-time.

28. (Currently Amended) The device for estimating DC motor coil temperature as set forth in one of ~~claim 10 to claim 15~~ claims 11, 12 and 14, wherein

the coil temperature estimating section is further configured to detect the motor current under a condition that a predetermined voltage is output by using a PAM circuitry.